DOCUMENT RESUME

ED 043 892 CG 005 825

AUTHOR	Holland, John L.
TITLE	A Theory-Ridden, Computerless, Impersonal Vocational Guidance System.
INSTITUTION	American Psychological Association, Washington, D.C.; Johns Hopkins Univ., Baltimore, Md. Center for the Study of Social Organization of Schools.
PUB DATE	Sep 70
NOTE	16p.; Paper presented at American Psychological Association Convention, Miami Beach, Florida, September 3-8, 1970
AVAILABLE FROM	John L. Holland, Center for Social Organization of Schools, Johns Hopkins University, Baltimore, Maryland.
EDRS PRICE	EDRS Price MF-$0.25 HC Not Available from EDRS.
DESCRIPTORS	Guidance, Guidance Objectives, Guidance Programs, *Guidance Services, Individual Characteristics, *Occupational Choice, *Occupational Guidance, *Systems Approach, *Vocational Counseling, Vocational Interests

ABSTRACT

Beginning with a brief summary of the need for practical vocational guidance systems, the author explains his Self Directed Search for Educational and Vocational Planning (SDS), which was developed to provide a cheap, practical, vocational guidance system having a high degree of scientific validty and client effectiveness. The SDS is a self-administered, self-scored and self-interpreted vocational counseling tool which contains an assessment booklet and a classification booklet, both of which are products of a theory of personality types and environmental models. The development of the SDS is summarized. An informed evaluation based on the use of the SDS with 5,000 widely divergent subjects suggests that: (1) 50% of those taking it like it; (2) others are troubled by the results and could use couseling; (3) the SDS is applicable to a wide age range; and (4) the SDS has the desirable characteristics of immediacy, self-direction, completeness, independence, personal development and safeguards. The conclusion suggests some beneficial side-effects of the SDS. (TL)

ED 043892

A THEORY-RIDDEN, COMPUTERLESS, IMPERSONAL VOCATIONAL GUIDANCE SYSTEM[1]

John L. Holland

Center for Social Organization
of Schools

The Johns Hopkins University

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

I would like to tell you about a vocational guidance system I developed this year. I will give you the device itself so you can try it out on yourself or a friend. I only ask that you keep any insights about yourself to yourself. I am not prepared to render help or to cope with any invasion of privacy ruckus.

Let me begin by a brief summary of the need for practical vocational guidance systems and services.

As always, there are not enough counselors to provide vocational guidance for all. And, well-trained or not, the effectiveness of traditional vocational guidance is only fair. In addition, the traditional one-to-one relationship is expensive for the client and often wasteful of counselor time and talent. Finally, the computerized systems for coping with the great need for vocational guidance are usually expensive, frequently impractical, and often atheoretical.

The main goal in developing the Self Directed Search for Educational and Vocational Planning (alias the SDS) was to develop a cheap, practical vocational guidance system having a high degree of scientific validity

[1]Presidential Address, Division 17, American Psychological Association, September 1970.

CG 005 825

and client effectiveness. Among other things, my hidden agenda was to demonstrate that you can do something valuable without a computer and almost without funds.

Although I put the SDS together this year, I have been thinking about a device like the SDS for some time. Like some of you, I have been intimidated by my professional training so that I believed that helping others must be through personal relationships, that the good solutions lay in better tests, more information and its processing by computers, that misinterpretation of tests by clients is more harmful than misinterpretation by counselors, or the failure to give any help at all. And finally, that if you tell the client all we know about vocational guidance, he will make poor decisions and commit self-destructive acts. At any rate, I found some ways to negate these beliefs and to find a solution by following some other paths and models. But first let me describe the SDS.

DESCRIPTION

The Self-Directed Search (SDS) is a self-administered, self-scored, and self-interpreted vocational counseling tool. The SDS includes two booklets. To use the SDS, a person merely fills out the assessment booklet and obtains a three-letter occupational code. He then uses the three-letter code to search for suitable occupations in the occupational classification booklet. Most people complete the SDS in 30 to 50 minutes. In short, the SDS provides a vocational counseling experience by simulating what a person and his counselor do in several interviews.

The typical person's experience in taking a psychological test is characterized by ambiguity (the person doesn't clearly know what is going on), dependency (the person is a passive participant), and delay (he must wait for results). The taking of the SDS is a different experience. When a person takes the SDS he knows what is being assessed, he participates in his own scoring, profiling, and interpretation, and he gets the results of his self-assessment experience immediately.

The SDS has two main purposes: to provide a vocational counseling experience for people who do not have access to professional counselors, or who cannot afford their services, and to multiply the people a counselor can serve. For example, a counselor can concentrate on those people that this inexpensive service fails to help, and can act as the manager of the SDS system--its distribution, its coordination with other kinds of vocational service, and its evaluation.

The assessment booklet has separate sections on Occupational Daydreams, Activities, Competencies, Occupations, and Self-Estimates. It follows Holland's theory of vocational choice. Consequently, it is organized to assess a person's resemblances to each of the personality types: Realistic, Investigative, Artistic, Social, Enterprising, and Conventional.

The scales and ratings in the assessment booklet include:

Activities (six scales of eleven items each.)

Competencies (six scales of eleven items each.)

Occupations (six scales of fourteen items each.)

Self-Estimates (two sets of six ratings, each rating corresponds to a type.)

Other sections show a person how to score, graph, and interpret his responses.

The person uses his summary code, a three-letter code obtained from his own assessment, to search the occupational classification booklet. The occupational classification booklet, containing 431 occupational titles, includes 95% of the labor force in the U.S. The individual occupations are arranged according to Holland's earlier classification, and each occupational subclass is also arranged according to the level of general educational development (GED) that an occupation requires (See Dictionary of Occupational Titles). With a few exceptions, each occupation is also designated by its six-digit DOT number. The theoretical origin and empirical base for the classification is elaborated in a report by Holland et al. (1970).

The last section in the assessment booklet, Some Next Steps, suggests how a person can obtain more information for resolving his vocational decision and includes some safeguards to prevent negative outcomes.

DEVELOPMENT

I have summarized the development of the SDS according to: the Theory, the Assessment, the Classification, and the Translation from Assessment to Classification. This orderly presentation promotes brevity and covers up the disorderly character of the thinking and research that led to the SDS.

The Theory. The assessment and classification booklets which form the SDS are direct products of a theory of personality types and environmental models. The theory was proposed in 1959 (Holland, 1959) and has

been investigated by Holland and others (Astin & Holland, 1961; Holland, 1962, 1963, 1963-4, 1966, 1968; Holland & Nichols, 1964; Folsom, 1969; Osipow, Ashby & Wall, 1966; Walsh & Lacey, 1969; Elton & Rose, in press; Richards & Seligman, 1968). These investigations and the work of other researchers led to the definition of the personality types in terms of the following Vocational Preference Inventory Scales: Realistic, Intellectual, Artistic, Social, Enterprising, and Conventional. The search for the correlates of these scales then led to activity scales, competency scales, and self-ratings, associated with each type. The origin of these scales and ratings began in the first investigation of the theory (Holland, 1962) and runs through most subsequent publications. In general, self-ratings, activities, competencies, and occupational (VPI) scales were used for the SDS, because they fit the theory of how types develop, and because they have provided consistent predictions about types, when types were defined by the VPI, choices of educational field, or choice of occupation. In addition, these scales yielded useful predictions about various kinds of nonacademic achievements (Holland, 1961; Nichols & Holland, 1963; Holland & Nichols, 1964; Richards, Holland & Lutz, 1967).

The Assessment Booklet. The items and scales in the assessment booklet include: (1) Occupational Daydreams, (2) Activities, (3) Competencies, (4) Occupations, and (5) Self-Ratings.

The "Occupational Daydreams" item on page 1 comes from a theoretical study (Holland, 1963). In that investigation and subsequent studies, (Holland, 1968), we learned that a person's history of occupational preferences and especially his most recent preferences are good estimates

of what a person will choose or do next. The inclusion of occupational daydreams serves two purposes: (1) If a prediction of a person's future occupation is desired, a person's announced choice is as efficient as any psychological device, and (2) the history of occupational daydreams provides a crude check on the validity of the Summary Code.

The evidence for relying on a person's occupational aspirations for the prediction of occupational field is contained in the following references: Holland & Lutz (1967), Holland & Whitney (1968), Whitney (1969), Holland, Viernstein, Kuo, Karweit, and Blum (1970). The principle enunciated by this research is "worry more about a person with an inconsistent work history than one with many job changes."

The relationships between the summary scales and the individual SDS scales are shown in Table 1. Note that every individual scale correlates most highly with its corresponding summary scale. For example, the Realistic Activities Scale correlates most positively with the Realistic Summary Scale, the Investigative Activities Scale correlates most positively with the Investigative Summary Scale. These results clearly reveal that the individual scales are correctly keyed to the corresponding summary scale that students use to obtain their three letter summary code.

Table 1

The homogeneity coefficients for the assessment scales and ratings are given Table 2. With a few exceptions the SDS scales have a useful degree of internal consistency. In the complete 36 x 36 matrices, only

4 of 90 and 5 of 90 correlations for men and women deviate from the theoretical expectation; that is the largest correlations should be on the diagonal. In short, R scales should correlate most of all with other R scales, I scales with other I scales, etc.

Table 2

The constructive and predictive validity of the scales and items are contained in the theoretical studies which led to the development of the SDS (Holland, 1962; Holland, 1965; Holland, 1968). In general, these validities are not remarkable, because only low to moderate relationships were found. Parenthetically, I emphasize that the best predictions will be obtained from a person's stated occupational choice, current occupation, or work history rather than from any psychological device. The SDS is only intended to be a temporary crutch to facilitate a person's occupational search. At best, it can only support a class of occupations a person prefers, it cannot efficiently predict a single choice for a single person.

The Classification Booklet. The occupational classification booklet also is the outcome of a series of theoretical studies. To summarize, a classification which covers 95% of the labor force was created by integrating data obtained earlier from the use of the VPI, from an alternate form applied to the data in the Strong archives (See Campbell & Holland, in press), and from 32 factor scores describing 879 occupations (McCormick, et al.). These diverse data were translated into Holland's classification so that the resultant classification is largely empirical

(31 occupations were added using DOT data only), and so that users are provided a comprehensive classification with a single theory for its interpretation and use. The GED levels from the DOT were added to each subgroup in the classification to narrow a person's search for suitable classes of occupations.

The Translation from Assessment to Classification. A device like the SDS is possible because the assessment and the occupational classification use the same concepts from a single theoretical system. The assessment booklet is a device to assess a person's resemblance to each of six occupational types. The summary code is just that--a summary of a person's most striking resemblances weighted according to their rank in each of five profiles. Because the occupational classification employs the same six concepts, it becomes possible to show people the classes of occupations which resemble their own personality.

New work will be devoted to increasing the range of occupations and correcting the estimated occupational profiles (three-letter codes). The SDS is not a flawless device, but its theoretical design provides some self-corrective features.

EVALUATION

Although I am not capable of an objective evaluation of the SDS, I will give you my evaluation anyway, and you can provide your own corrections for my enthusiasm. Let me start by pointing out some unusual ambiguities in its evaluation which I do not know how to resolve. Because the SDS rests on a complex assessment, a classification scheme, and a weighted mathematical translation from assessment to classification,

the validity of each of these units and their interactions needs careful examination. These considerations are in addition to the usual concerns with the reliability and the validity of individual scales and items.

In general, the validity of the SDS rests on my theory of personality types and environmental models. Everything in the SDS comes from earlier work concerned with the investigation of the theory including the arrangement of scales. Consequently, the validity of the SDS hinges partly on an evaluation of the theory--another task I cannot perform objectively. At the same time, my colleagues and I have obtained considerable evidence that the theory has some usefulness and that the scales and items used to define types and occupational classes have limited validity for some purposes.

Lacking a formal empirical evaluation, I will substitute an informal evaluation based on the use of the SDS with 5,000 University of Maryland freshmen, my neighbors, my friends, some inner city black children, and the members of my own family.

1. About 50 percent of the people who take the SDS like it and are often enthused. The other 50 percent sometimes appear troubled when they don't receive the right answers. A clinical investigation is planned to learn what this outcome means. I see the dissatisfied 50 percent as the population that counselors should work with and the SDS as a simple way to identify that population.

2. The SDS appears applicable to a wide age range. Children don't find it too difficult and adults don't find it childish. One nine year-old even wrote me a note about her experience.

3. The SDS has by its design several other desirable characteristics: They include:

Immediacy. Anyone can use the SDS whenever he wants to, and he does so with privacy.

Self-Direction. Because the SDS is always controlled by its user, people enjoy the experience, and the learning experience cannot be marred by occasional and unavoidable conflicts with test administrators, teachers, or counselors. In a sense, using the SDS is like a successful programmed learning experience.

Completeness. The SDS maybe the first device to provide a relatively complete vocational counseling experience. In the SDS, the personal assessment, the occupational search, and the translation of the assessment into occupational terms are contained in a single pair of booklets along with some ideas for some "Next Steps" for confirming or extending a person's occupational search.

Independence. Users are not dependent upon the vagaries of scoring services, computers, and appointment restrictions.

Personal Development. Because of its desirable characteristics, the SDS lends itself to repeated use by students. Such a periodic stock-taking is consistent with a developmental conception of vocational counseling.

Safeguards. The SDS contains four major safeguards to prevent errors or destructive outcomes. (1) A person's resemblance to each of the six types in the personal assessment is determined five times, not once. (2) The personal assessment is used in a conservative fashion. (A person searches for all permutations of his three-letter summary

code, not one permutation.) (3) A person compares his summary code with the codes of his occupational daydreams. He is instructed to seek help if his summary code and daydreams codes do not agree. Because a person's vocational aspirations have substantial predictive validity, a major discrepancy between the occupations designated by a person's summary code and the occupations listed as "Occupational Daydreams" implies several possibilities which should be investigated: scoring errors, conflict between what a person is and wants to become, or other idiosyncratic problems which the SDS cannot cope with. (4) The user is referred to a counselor for more information or for other kinds of help.

And finally, the SDS is expected to provide helpful service at a low cost or to have an unusually desirable cost/benefit ratio.

SOME AFTERTHOUGHTS

Finally, I have had some second thoughts about the SDS. I started out to develop a mechanical vocational guidance system, but I now believe I may have done something else without knowing it.

1. I may have developed a better diagnostic device. I keep noticing that the three letter codes of friends and neighbors make good sense.

2. I have successfully tested the theory in a complex and crude way by using the theory to design the SDS. The item analyses indicate that all items work without exception. There is no need for scale revision unless you want psychometric perfection. And, the scale interrelationships follow theoretical expectations with only a few exceptions.

3. I may have discovered a new kind of counseling--what I call "counseling from the outside"--working with people from the outside or in a superficial way. People who take the SDS can't seem to stop talking about themselves. Sometimes you can't get a word in edgewise. You seem to have a more colleague-like discussion rather than a doctor-patient relationship so that a person takes the initiative early and walks away with less hesitation and more quickly.

4. I may have found a better way to define the personality types in the theory for new research, or I can start all over again.

That's the story of the SDS. I hope you will try out your sample booklets.

REFERENCES

Abe, C., Holland, J. L., Lutz, S. W., and Richards, J. M., Jr. A description of American college freshmen. ACT Research Report No. 1. Iowa City, Iowa: The American College Testing Program, 1965.

Campbell, D. P. and Holland, J. L. Applying Holland's occupational classification to Strong's data. Journal of Vocational Behavior, in press.

Holland, J. L. A theory of vocational choice: Journal of Counseling Psychology, 1959, 6, 35-45.

Holland, J. L. Creative and academic performance among talented adolescents. Journal of Educational Psychology, 1961, 52, 136-147.

Holland, J. L. Some explorations of a theory of vocational choice: I. one- and two-year longitudinal studies. Psychological monographs, 1962, 76 (26, Whole No. 545).

Holland, J. L. Some explorations of a theory of vocational choice and achievement: II. A four-year prediction study. Psychological Reports, 1963, 12, 545-594. Southern Universities Press, 1963, monograph supplement 4 - V12.

Holland, J. L. Explorations of a theory of vocational choice: IV. Vocational preferences and their relations to occupational images, daydreams, and personality. Vocational Guidance Quarterly, published in four parts in Summer, Autumn, and Winter issues, 1963-64.

Holland, J. L. Manual for the vocational preference inventory. (6th rev.) Palo Alto, California: Consulting Psychologists Press, 1965.

Holland, J. L. A psychological classification scheme for vocations and major fields. Journal of Counseling Psychology, 1966, 13, 278-288. (a)

Holland, J. L. The psychology of vocational choice: A theory of personality types and model environments. Waltham, Massachusetts: Blaisdell, 1966. (b)

Holland, J. L. Explorations of a theory of vocational choice: VI. A longitudinal study using a sample of typical college students. Journal of Applied Psychology monographs, 1968, 52, No. 1. (b)

Holland, J. L. & Lutz, S. W. Predicting a student's vocational choice. ACT Research Report No. 18. Iowa City, Iowa, American College Testing Program, 1967.

Holland, J. L. & Nichols, R. C. Prediction of academic and extra-curricular achievement in college. Journal of Educational Psychology, 1964, 55, 55-65.

Holland, J. L.; Viernstein, M. C.; Kuo, H.; Karweit, N. L. and Blum, Z. D. A psychological classification of occupations. Research Report No. , Center for Social Organizttion of Schools, Johns Hopkins University, 1970.

Holland, J. L.; Whitney, D. R.; Cole, N. S. and Richards, J. M., Jr. An empirical occupational classification derived from a theory of personality and intended for practice and research; ACT Research Report No. 29. Iowa City, Iowa: The American College Testing Program, 1969.

McCormick, E. J.; Jeanneret, P. R. and Mecham, R. A study of job characteristics and job dimensions based on the position analysis questionnaire. Office of Naval Research Contract Nonr-1100 (28), Report No. 6: Final Report. Lafayette, Indiana, Occupational Research Center, Purdue University, 1969. (b)

Nichols, R. C. & Holland, J. L. Prediction of the first year performance of high aptitude students. Psychological Monographs, 1963, 77, No. 7 (Whole No. 570).

Richards, Jr. J. M.; Holland, J. L. & Lutz, S. W. The prediction of student accomplishment in college. Journal of Educational Psychology, 1967, 58, 343-355.

Richards, Jr. J. M. & Seligman, R. Faculty and curriculum as measures of college environment. Paper presented at American Psychological Convention, San Francisco, 1968.

Astin, A. W. & Holland, J. L. The environmental assessment techniques: A way to measure college environment: Journal of Educational Psychology, 1961, 52, 308-316.

Osipow, S. H.; Ashby, J. D. and Wall, H. W. Personality types and vocational choice: A test of Holland's theory. Personnel and Guidance Journal, 1966, 45, 37-42.

Folsom, C. H. An investigation of Holland's theory of vocational choice. Journal of Counseling Psychology, 1969, 16, 260-266.

Holland, J. L. & Nichols, R. C. Explorations of a theory of vocational choice: III. A longitudinal study of change in major field of study. Personnel and Guidance Journal, 1964, 43, 235-242.

Walsh, W. B. & Lacey, D. W. Perceived change and Holland's theory. Journal of Counseling Psychology, 1969, 16, 348-352.

Elton, C. F. & Rose, H. A. Male Occupational Constancy and Change: It's Prediction According to Holland's Theory. Journal of Counseling Psychology, in press.

TABLE 1

Relation of Individual Scale Scores and Self-Ratings to Summary Scores

SDS Scales	Men (N=358) Summary Score						Women (N=360) Summary Score					
	R	I	A	S	E	C	R	I	A	S	E	C
Activities												
RA	77	12	-18	-34	-25	-10	47	25	05	-20	-13	-14
IA	23	67	-12	-29	-30	-12	14	59	-12	-22	-28	-22
AA	-15	-07	63	-08	-09	-23	-10	-09	45	-10	-05	-22
SA	-23	-20	-13	54	30	00	-18	-17	-10	40	17	-05
EA	-27	-28	-05	29	63	00	-15	-26	-07	06	54	-13
CA	02	-16	-20	02	11	61	00	-06	-23	09	-02	57
Competencies												
RC	70	20	-18	-40	-26	-17	40	19	-03	-20	-18	-11
IC	19	57	-12	-36	-30	-31	16	54	-05	-24	-27	-17
AC	-13	-09	63	01	01	-22	-10	-21	63	-18	-08	-29
SC	-29	-22	-07	51	34	-07	-18	-22	-11	36	20	-15
EC	-20	-23	-02	-21	56	-06	-07	-18	-09	06	44	-23
CC	03	-09	-13	-05	08	43	01	-11	-17	01	10	42
Occupations												
RO	56	11	-15	-30	-19	-03	31	20	07	-27	-17	-15
IO	06	59	-05	-24	-27	-21	20	51	-05	-30	-26	-22
AO	-31	-19	65	00	04	-19	-06	-19	54	-21	-08	-30
SO	-32	-28	-06	50	20	06	-14	-18	-07	42	02	-13
EO	-22	-29	-13	11	55	27	-09	-21	-04	-06	44	01
CO	-06	-12	-24	-10	14	55	04	08	-23	-09	02	29
Self-Ratings												
R1	69	14	-19	-41	-23	-14	50	27	-06	-20	-16	-11
I1	18	63	-11	-36	-28	-25	20	61	-17	-25	-28	-16
A1	-16	-12	62	-06	-05	-24	-14	-19	67	-21	-15	-31
S1	-38	-16	-04	47	32	-09	-21	-23	-10	46	17	-02
E1	-23	-33	-13	28	62	09	-10	-29	-13	20	60	06
C1	-13	-19	-20	06	29	55	-04	-17	-22	06	14	59
R2	63	07	-24	-34	-19	-08	46	18	02	-19	-14	-09
I2	05	40	-20	-14	-12	15	11	44	-24	-05	-13	09
A2	-12	-04	59	-01	00	-19	-09	-18	60	-09	-14	-07
S2	-26	-26	-04	50	29	02	-17	-29	06	31	19	-11
E2	-25	-32	-15	28	61	20	-07	-25	-17	13	50	12
C2	-16	-26	-19	09	31	54	-02	-15	-18	06	17	55

TABLE 2

Internal Consistency Coefficients for Activities, Competencies, and Occupations Scales

	Men (N=358)			Women (N=366)		
	X	SD	KR20	X	SD	KR20
Activities						
Realistic	4.46	3.28	.84	1.32	1.94	.77
Investigative	5.60	2.96	.77	4.27	2.65	.75
Artistic	4.61	2.76	.73	6.94	2.39	.70
Social	6.56	2.25	.63	8.50	1.81	.53
Enterprising	6.23	2.90	.78	6.20	2.74	.75
Conventional	3.60	2.78	.79	3.73	2.73	.79
Competencies						
Realistic	5.30	3.30	.83	1.14	1.72	.75
Investigative	7.77	2.43	.72	6.20	2.50	.68
Artistic	2.67	2.27	.71	4.60	2.59	.69
Social	6.43	2.48	.71	8.09	2.17	.65
Enterprising	4.59	2.77	.75	4.72	2.75	.75
Conventional	2.77	2.17	.69	3.15	2.34	.72
Occupations						
Realistic	3.12	2.77	.77	1.19	1.77	.75
Investigative	5.07	3.90	.86	3.77	3.38	.84
Artistic	3.48	3.62	.87	5.77	3.93	.85
Social	3.61	3.43	.84	6.36	3.67	.82
Enterprising	4.01	3.42	.83	2.43	2.63	.78
Conventional	2.43	3.25	.88	1.48	2.32	.82